CLAIMS

1. A translucent ceramic principally containing a composition represented by the formula $Ba\{Ti_{x1}M_{x2}(Mg_{1-t}Zn_t)_y(Ta_{1-u}Nb_u)_z\}_vO_w$, wherein M is at least one selected from the group consisting of Sn, Zr, and Hf; w is a positive number for maintaining the electrical neutrality; $x1 + x2 + y + z = 1$; $0.015 \leq x1 + x2 \leq 0.90$; $0 < x1 \leq 0.90$; $0 \leq x2 \leq 0.60$; $1.60 \leq z / y \leq 2.40$; $1.00 \leq v \leq 1.05$; $0 < t < 1$; and $0 \leq u \leq 1$.

2. A translucent ceramic principally containing a composition represented by the formula $Ba\{Ti_{x1}M_{x2}Zn_y(Ta_{1-u}Nb_u)_z\}_vO_w$, wherein M is at least one selected from the group consisting of Sn, Zr, and Hf; w is a positive number for maintaining the electrical neutrality; $x1 + x2 + y + z = 1$; $0.01 \leq x1 + x2 \leq 0.60$; $0 < x1 \leq 0.60$; $0 \leq x2 \leq 0.30$; $1.60 \leq z / y \leq 2.40$; $1.00 \leq v \leq 1.05$; and $0 \leq u \leq 1$.

3. A translucent ceramic principally containing a composition represented by the formula $Ba\{Ti_{x1}M_{x2}Mg_y(Ta_{1-u}Nb_u)_z\}_vO_w$, wherein M is at least one selected from the group consisting of Sn, Zr, and Hf; w is a positive number for maintaining the electrical neutrality; $x1 + x2 + y + z = 1$; $0.04 \leq x1 + x2 \leq 0.80$; $0 < x1 \leq 0.80$; $0 \leq x2 \leq 0.40$; $1.60 \leq z / y \leq 2.40$; $1.00 \leq v \leq 1.05$; and $0 \leq u \leq 1$.

4. The translucent ceramic according to any one of Claims 1 to 3, having a linear transmittance of 20% or more, the linear transmittance being determined using visible light with a wavelength of 633 nm and a sample having a thickness of 0.4 mm.

5. The translucent ceramic according to Claim 4, having a refractive index of 2.01 or more, the linear transmittance being determined using visible light with a wavelength of 633 nm.

6. The translucent ceramic according to any one of Claims 1 to 3, having a polycrystalline structure.

7. A process for producing the translucent ceramic according to any one of Claims 1 to 3, comprising:

a step of preparing an unfired ceramic body, formed using a mixture of ceramic raw material powders, having a predetermined shape;

a step of preparing a co-firing composition having substantially the same composition as that of the mixture of the ceramic raw material powders; and

a step of firing the unfired ceramic body in an atmosphere with an oxygen content of 90% by volume or more

in such a manner that the unfired ceramic body is in contact with the co-firing composition.

8. The process according to Claim 7, wherein the co-firing composition is powder and the firing step is performed in such a manner that the unfired ceramic body is embedded in the co-firing composition.

9. A translucent ceramic produced by the process according to Claim 7.

10. An optical component made of the translucent ceramic according to any one of Claims 1 to 3.

11. An optical device including the optical component according to Claim 10.